

# THE IMPACT OF TERRORISM ON TAX ENFORCEMENT EFFECTIVENESS: A CASE STUDY OF THE BASQUE COUNTRY AND NAVARRE

Luca Salvadori<sup>\*</sup>

## ABSTRACT

This paper analyses the impact of terrorism on tax enforcement effectiveness by focusing on the case of the Basque Country and Navarre. The reduced-form model shows that terrorism negatively affects tax enforcement set by the regional administration and, consequently, the way it is perceived by residents in this area. These results are tested by using Spanish surveys and other data sources, finding evidence of the negative impact of terrorism on tax enforcement as it is perceived by residents in the Basque Country and Navarre. In particular, this effect is stronger for entrepreneurs and liberal professionals. Instead, no significant impact for individuals resident in the rest of Spain is found.

Keywords: tax enforcement, audit perception, fiscal externalities, terrorism

JEL Classification: D74, H23, H26, H83

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<sup>\*</sup> Tax Administration Research Centre (TARC), Department of Economics, University of Exeter Business School, EX4 4PU, Exeter, UK; and Barcelona Institute of Economics (IEB), Barcelona, Spain; email: [l.salvadori@exeter.ac.uk](mailto:l.salvadori@exeter.ac.uk).

## INTRODUCTION

Terrorism can impact aggregate economic outputs as well as specific sectors of activity representing more generally a cost for the economy of the affected countries (e.g., Enders & Olson, 2012). This negative economic impact is particularly relevant for countries or regions overwhelmed by terrorism (e.g., Abadie & Gardeazabal, 2003). Besides personal and material damage, terrorist activity induces a change in the risk perception of economic agents, impacting geographical mobility and population dynamics (Dreher, Krieger, & Meierrieks, 2011; Glaeser & Shapiro, 2002; Lozano-Gracia, Piras, Ibáñez, & Hewings, 2010; Sanso-Navarro, Sanz-Gracia, & Vera-Cabello, 2019) and leading to a permanent reduction in productive investments and consumption of goods (Abadie & Gardeazabal, 2008; Eckstein & Tsiddon, 2004). Additionally, the predatory financing system employed by terrorists may also impact the economy and its agents. In this light, one of the main forms of funding used by terrorist groups is that of extortion – the so-called ‘revolutionary tax’ paid by entrepreneurs and liberal professionals.<sup>1</sup> As a result of its impact on economic activity and the behaviour of economic agents, terrorism may also influence the design of fiscal and monetary policies, either as any other unpredictable shock would or as part of the policy-makers’ endogenous reaction to terrorist activity. As the previous literature suggests (Gupta, Clements, Bhattacharya, & Chakravarti, 2004), terrorism can affect the fiscal accounts through three main potential channels: by disrupting real economic activity (gross domestic product – GDP); by distorting the composition of government spending; and by affecting the tax bases with negative consequences for tax revenues. While the evidence shows that terrorism has had little negative or no significant impact on GDP growth except in terrorism-plagued countries (see Gaibullov & Sandler, 2019, for a survey) and demonstrates an increase in public spending to cover additional security needs (e.g., Hobjin, 2002; Gupta et al., 2004) with certain negative impact on the budget deficit (e.g., Eichenbaum & Fisher, 2004; Wildasin, 2002), very little has been said about the potential effects of terrorist activity on tax bases, tax collection and tax revenues.

The present paper contributes to this literature by analysing the presence of externalities in tax collection due to terrorism. Specifically, the Basque Country and Navarre are used as a case study to test the impact of terrorism on the effectiveness of tax enforcement policies, broadly intended as the capacity or effectiveness in enforcing tax compliance. The Basque framework<sup>2</sup> is particularly interesting to analyse

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<sup>1</sup> This is the practice of several terrorist organizations, including Euskadi Ta Askatasuna (Basque Homeland and Freedom – ETA) in the Basque Country (Buesa & Baumert, 2013; Leonisio, Molina, & Muro, 2017); the Provisional Irish Republican Army (IRA) (Silke, 1998); and the National Liberation Front of Corsica (FCLN) (Sanchez, 2008).

<sup>2</sup> The Basque framework is referred to in a wider sense to include Spanish so-called foral autonomous communities of the Basque Country and Navarre. The foral community of the Basque Country comprises three provinces (Álava, Biscay and Gipuzkoa), while the foral community of Navarre coincides with the homonym province. For a more detailed description of the Basque framework and ETA terrorist organization, see Appendix A in the supplemental data online.

because terrorism has been a constant plague in this area. Furthermore, the provinces belonging to this territory have a high level of tax autonomy, while the remaining Spanish provinces are mainly administered by a central tax agency. Terrorism can distort the behaviour of the economic agents residing and operating there by inducing them to reduce their investment and consumption or to move their residence in order to avoid the costs of terrorism. In this light, De la Fuente (1999) and Sanso-Navarro et al. (2019) provide evidence that migration contributes to explain the negative demographic effects of terrorism in the Basque Country. Figure 1 shows the presence of a negative correlation between aggregate investment in the Basque Country and Navarre and the level of activity of the terrorist organization ETA in terms of killings per year. This provides casual evidence of the negative impact of terrorism on the economic activity in these regions.

[FIGURE 1]

Given the negative economic shock induced by terrorism and the correspondent threat posed by the geographical mobility of tax bases, the regional tax authorities of the Basque Country and Navarre might have an incentive to counteract these costs by strategically employing their tax autonomy and alleviating tax pressure so as not to lose their tax bases. Owing to the direct/indirect damages to their businesses caused by terrorist activity and to the pressure of terrorist extortion, entrepreneurs and liberal professionals constitute a cluster within the population that is especially exposed to these costs. Tax enforcement policy is a flexible, adaptable instrument for selective intervention, which can be used to compensate this specific cluster of the population for the costs incurred.<sup>3</sup> In this regard, there is casual evidence that at least one Basque tax authority has exempted from fiscal inspections the tax returns of the entrepreneurs targeted by ETA.<sup>4</sup>

The objective of this paper is to determine whether regional tax autonomy in the Basque Country and Navarre can be employed to adjust tax enforcement as to compensate the negative effect of terrorism on tax bases. To do so, a reduced-form theoretical model is developed and empirically tested by using a data

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<sup>3</sup> The previous literature on tax externalities has demonstrated that sub-central tax authorities may employ tax enforcement as an additional instrument for strategic interaction (Cremer & Gahvari, 2000; Durán-Cabré et al., 2015, 2016).

<sup>4</sup> An investigation conducted in 2004 by the Spanish anticorruption prosecution agency, reported by Buesa (2011) and by the national press (e.g., Korta, 2004; Bornstein, 2004), reported that the tax authority of the Basque province of Biscay formally exempted from being audited the tax returns of a group of entrepreneurs and liberal professionals who had treated payments to the terrorist organization as deductions in their tax forms. The consequent fiscal opacity might further distort the taxpayers' incentives to resist extortion, particularly 'if the payments to terrorists are mentally accounted for as an additional tax and, furthermore, if you are confident of obtaining a tax deduction from the tax authorities' (Barbería, 2004).

set based on survey results and other sources. The results of the theoretical analysis confirm the presence of externalities in tax enforcement due to the threat of the mobility of tax bases attributed to terrorism. The reaction function of tax enforcement to the costs of terrorism is derived and a negative sign is obtained that is also reflected in the way tax enforcement is perceived by residents in the region affected by terrorism. In order to corroborate this result, alternative measures of the costs produced by ETA's terrorist activity are employed and Spanish data based on surveys, in which respondents are asked to express their opinion about the authorities' tax enforcement effort, are used. Certainly the effectiveness of a tax enforcement policy largely depends on the way it is perceived by taxpayers in the sense that what matters about taxpayers' decision to evade is their perception of tax enforcement (e.g., Slemrod, 2007, 2019; Slemrod, Blumenthal, & Christian, 2001; and Kleven, Knudsen, Kreiner, Pedersen, & Saez, 2011 on the effect of differences in perceived audit rates on tax compliance). This perception is driven by two dimensions of the reality (Slemrod, 2019). Indeed, the tax administration can influence the reality as well as the perception of reality. On the one hand, it can increase the actual tax audit rate by, for example, hiring and training more auditors or more efficiently using the third-party information it routinely receives. On the other hand, it can also, for example, selectively disseminate information about its activities in order to increase taxpayers' perceived tax audit probability and foster their tax compliance. In this sense, Blank and Levin (2010) show that the US tax authority has deliberately used tax enforcement publicity to influence individual taxpayers' perceptions and knowledge about audit probability, tax penalties and the government's tax enforcement efficacy while taxpayers were preparing to file their annual individual tax returns. By estimating ordered response models, a significant and negative impact of terrorism on tax enforcement as perceived by individuals who reside in the Basque Country and Navarre is found. In particular, this impact is found to be stronger for entrepreneurs and liberal professionals, while no significant impact is found for individuals resident in the rest of Spain.

The paper is organized as follows. The next section provides a summary of the relevant literature. The third section sets the theoretical framework. The fourth section presents the empirical strategy. The results obtained from the empirical analysis are presented in the fifth and sixth sections. Finally, the seventh section concludes.

## **LITERATURE REVIEW**

The literature on the economics of terrorism is vast and can be usefully classified into different areas of study, including the analysis of the impact of terrorism on aggregate economic output and on specific sectors of activity as well as the effect of terrorism on economic policies. In particular, an increasing number of papers focuses on the economic output consequences of terrorist activity for individual

countries overwhelmed by terrorism (e.g., Abadie & Gardeazabal, 2003; Dorsett, 2013; Eckstein & Tsiddon, 2004; Eldor & Melnick, 2004). The main conclusion of these articles is that terrorism represents a cost for the economies of the countries affected, and that terrorist activities do reduce economic growth, particularly if they are concentrated in specific regions (e.g., Abadie & Gardeazabal, 2003; Dorsett, 2013; World Bank, 2002, 2003).<sup>5</sup> That terrorism represents an economic cost is confirmed by the literature analysing the effect of terrorism on specific economic sectors (e.g., Llussa & Tavares, 2007a, 2007b). In this regard, several articles show that terrorist attacks may be considered as idiosyncratic shocks associated with noticeable decreases in consumption and investment (e.g., Eckstein & Tsiddon, 2004), as well as in capital flows and trade across borders (e.g., Abadie & Gardeazabal, 2008; Bandyopadhyay, Sandler, & Younas, 2014; Bandyopadhyay, Sandler, & Younas, 2018; Nitsch & Schumacher, 2004), tourism (e.g., Buckley & Klemm, 1993; Drakos & Kutun, 2003; Enders & Sandler, 1991, 1996; Neumayer & Plümper, 2016), and airline demand (e.g., Ito & Lee, 2005).

Yet, the possibility that terrorist activity might have fiscal and monetary consequences has received only limited attention in the literature, although, as Wildasin (2002) notes, terrorist ‘attacks are likely to trigger a complex series of simultaneous adjustments that reverberate throughout the entire system of private and public decision-making’ (p. 3; added emphasis). In this light, Gupta et al. (2004) analyse the fiscal effects of armed conflicts and terrorism on 20 low- and middle-income countries. These authors empirically corroborate that terrorism negatively affects GDP growth and changes the composition of government spending by increasing military expenditure in response to additional security needs, accompanied by a negative effect on social public expenditure (health and education) and on the level of the public deficit. On the revenue side, they show that the fiscal accounts are affected only in terms of a reduction in real economic activity, but they do not show any significant effect of terrorism on the government revenue-to-GDP ratio.

Further contributions to this literature are made by various papers that deal with the fiscal and economic policy consequences of the terrorist attacks of 11 September 2001. Hobjin (2002) estimates that the economic impact of the 9/11 terrorist attacks in terms of US security policies are relatively small (0.35% of GDP in 2003) and they are unlikely to have major effects on the fiscal discipline of the government or on productivity in the private sector. Eichenbaum and Fisher (2004) and Wildasin (2002) argue that the large increase in military expenditures in the aftermath of 9/11 is not sufficient to justify the rise in the

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<sup>5</sup> Instead, cross-country and panel studies find mixed evidence for the macroeconomic effects of terrorism, showing that the average impact of terrorism on economic growth is either negative, but small in size (e.g., Blomberg et al., 2004; Tavares, 2004), or statistically insignificant (e.g., Gaibullov, Sandler, & Sul, 2014).

government deficit and the large fall in labour and capital tax rates. Thus, these papers suggest that isolated terrorist events have a significant but limited effect on fiscal policies. Further research is needed in this field and, seen from this perspective, the analysis of the impact of terrorism on fiscal policies in the Basque Country is particularly appropriate. Since this particular case is characterized by persistent terrorist violence over a long period of time, the potential impact of terrorism on fiscal policies might extend beyond the simple spending reaction to an unexpected but isolated economic shock.

Under the framework object of the analysis, tax authorities' incentive to counteract the negative impact of terrorism on tax bases originates from the threat of mobility. In this sense there is evidence that terrorism has a negative impact on population dynamics and mobility. Indeed, by generating uncertainty, stress and risk, terrorism indirectly and negatively impacts the utility of economic agents provoking a change in their behaviour and inducing them to escape from it. Evidence of such dynamics is provided by Dreher et al. (2011). By employing data of 152 countries for the period 1976–2000, these authors show that terrorism affects the cost–benefit considerations of the highly educated individuals in ways that make emigration more attractive. Similar results are provided by Sanso-Navarro et al. (2019) for the Basque–Navarrese context. In particular, their findings reflect the influence of migration on the negative demographic impact of the Basque conflict.

Given the case under study here, it is useful to refer to the literature that analyses the economic impact of terrorism in the Basque Country from a range of other different perspectives. On the output side, the economic consequences of ETA's terrorism have been accurately analysed by Abadie and Gardeazabal (2003). On the one hand, they estimate the macroeconomic impact of terrorism in the Basque Country using a synthetic Spanish region with the characteristics of the Basque Country, but in the absence of terrorism. Based on this comparison, the authors find a 10% average gap between Basque per capita GDP and the per capita GDP of a comparable synthetic region without terrorism. On the other hand, they use ETA's 1998–99 truce as a natural experiment to estimate the impact of terrorism on the stock markets, and they find that the stocks of firms with a significant share of their business activity in the Basque Country showed a positive relative performance during the truce period, and a relative negative performance when the truce ended. Abadie and Gardeazabal's (2003) results, together with Sanso-Navarro et al.'s (2019) findings, suggest that terrorism may have further externality effects on tax bases and, consequently, on Basque fiscal policies. This paper aims at filling this gap in the literature.

Buesa and Baumert (2013) describe ETA's financing system and its complex structural and economic network, but also illustrate the direct/indirect economic costs that ETA's terrorist activity has on the

Basque economy. Again, their study clearly indicates that when terrorism is persistent in the Basque Country and Navarre the negative economic impact is substantial.

Finally, this paper shares some of the features of the literature on the economic policy impact of mafia-type organized crime (in particular, Alexeev, Janeba, & Osborne, 2003, 2004). The theoretical framework presented in these papers is particularly appropriate for describing the context analysed here because of the similarities between mafia-type organizations and the terrorist organization ETA, particularly with regard to the extorting of regular payments from businessmen and firms, but more generally in that they represent a constant threat to the economic stability of the affected regions. This literature has emphasized the role of the mafia as an alternative tax collector and provider of public goods, such as protection and other services that facilitate a firm's underground activities, thus demonstrating the existence of externalities provoked by mafia on the tax collection process.

## THE THEORETICAL FRAMEWORK

Here the paper seeks to identify the possible externality in tax administration due to terrorist activity and raise the main hypothesis for the empirical analysis. A simple framework is developed consisting of a federal state comprising two representative regions ( $i = 1, 2$ ) of equal size in which the total population is normalized to one. Region 1 is subject to the permanent threat of terrorist activity, while the other one is not. Adhering to the most common approach in the literature (e.g., Shaw *et al.*, 2009; Slemrod & Yitzhaki, 2002, 1987), the tax administrations are designed as revenue maximizing agencies that set the tax enforcement rate  $\beta_i \in (0, 1)$  in their regions. Here the focus is on the potential externality effect of terrorism on tax enforcement policies, and so attention is restricted to one tax instrument,  $\beta_i$ , while assuming the tax rates in the two regions to be exogenously set<sup>6</sup>. Individuals face an income tax on an exogenously fixed and normalized-to-one tax base and decide the share  $\alpha \in (0, 1)$  of income to declare maximizing their utility. To ensure an interior solution, tax evasion is assumed to be costly for the individual. Since the effectiveness of a tax enforcement policy largely depends on the way it is perceived by taxpayers (e.g. Alm, 2000), it is assumed that the enforcement rate enters the individual's objective function through their perceived probability of being audited  $\beta_i^e(\beta_i, X)$ <sup>7</sup>. For sake of simplicity, the

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<sup>6</sup> Relaxing this assumption would not alter the results of the model, but it would add additional equilibria. Indeed, by being able to set two tax instruments, regions would compete in both instruments (Cremer & Gahvari, 2000; Durán-Cabré *et al.*, 2015) and theoretically may employ both of them in trying to compensate taxpayers for the cost of terrorism, although the use of statutory tax rates for this aim seems to be unlikely.

<sup>7</sup> Where  $\frac{\partial \beta_i^e}{\partial \beta_i} > 0$ ,  $\frac{\partial^2 \beta_i^e}{\partial \beta_i^2} > 0$  and  $X$  is a variable exogenously collecting information about the individual and situational characteristics as well as the social context that might have an impact on the individual's perceived enforcement (e.g. Alm, 2000).

individual's problem is not explicitly developed here, and the results of the standard literature are assumed (e.g. Allingham & Sandmo 1972). The model consists of three stages:

1. At the first stage, terrorist activity occurs in region 1 provoking an exogenous linear cost  $E > 0$  borne by residents in this territory.
2. At stage 2 the regional tax authorities set the regional tax enforcement rate  $\beta_i$ .
3. At the third stage individuals choose their region of residence.

The solution is provided by backward induction.

### Stage 3: The decision as to which region to reside in

This section employs the notion of “home attachment” (see Mansoorian & Myers, 1993 and 1997) to model the problem at stage 3. At this stage, individuals compare their indirect utility function in the two regions in order to decide where they wish to reside. Assuming that  $n \in (0, 1)$  indexes the individuals by measuring the non-pecuniary (psychic) benefit they derive from living in region 2 and that individuals are uniformly distributed between 0 and 1.<sup>8</sup> The preferences of individuals  $n$  with respect to location can be described thus:

$$V(n) = \begin{cases} U_1^* + a \times (1 - n) - E & \text{if } n \text{ lives in region 1} \\ U_2^* + a \times n & \text{if } n \text{ lives in region 2} \end{cases} \quad (1)$$

where  $U_i^* = U_i^*(1 - \alpha^*(\beta_i; t_i))$  represents the (pecuniary) indirect utility function of an individual residing in region  $i = 1, 2$ ,<sup>9</sup>  $t_i$  is the tax rate exogenously fixed in region  $i$ , and  $a \in (0, +\infty)$  is a parameter representing the cost sustained by an individual when moving away from her home region. This means that the taxpayer's utility from living in her own region increases with the cost of mobility. In this light  $a$  acts as a weight: if the costs of mobility are low (high), then the relative importance that the taxpayer assigns to the psychic part of the utility function, with respect to the pecuniary function, is low (high). In equilibrium, the marginal individual, that is, the one indifferent to residing in either region 1 or 2 is identified by  $n = n_1$  such that:

$$U_1^* + a \times (1 - n_1) - E = U_2^* + a \times n_1. \quad (2)$$

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<sup>8</sup> The psychic benefit from living in region 1 is then expressed as  $(1 - n)$ . Thus individuals indexed by  $n \in (0, \frac{1}{2})$  reside in region 1 while those identified by  $n \in (\frac{1}{2}, 1)$  reside in region 2.

<sup>9</sup> The direct utility function is defined as  $U = [1 - t_i \times [\alpha + (1 - \alpha) \times \tau \times \beta_i^e(\beta_i, X)] - g(1 - \alpha)]$  where  $(\tau - 1) > 0$  is the exogenous tax penalty per unit of tax evaded such that  $\tau \times \beta_i^e(\beta_i, X) < 1$  and the function  $g(1 - \alpha)$  represents the cost of tax evasion  $(1 - \alpha)$ , such that  $g'(1 - \alpha) > 0$ ,  $g''(1 - \alpha) > 0$ ,  $g(0) = 0$ ,  $g(1) \rightarrow +\infty$ .



Since  $\int_0^{n_1} dn = n_1$ ,  $n_1$  also represents the population resident in region 1 in equilibrium:

$$n_1 = n_1(\beta_1, E; a, t_1, t_2, \beta_2) = \frac{1}{2} + \frac{U_1^* - U_2^* - E}{2a}. \quad (3)$$

The population in region 2 in the migration equilibrium is:

$$n_2 = \int_{n_1}^1 dn = 1 - n_1 \quad (4)$$

## Stage 2: regional administrations set tax audit policies

At this stage, the regional tax authorities simultaneously set the tax enforcement rate by maximizing their objective function. As in previous studies (Cremer & Gahvari, 2000; Durán-Cabré, Esteller-Moré, & Salvadori, 2015), it is possible to show that regions engage in a mobility-based competition and consequent race to the bottom in audit rates.<sup>10</sup> However, unlike in these contributions, horizontal competition in tax enforcement is not fair in this model because of the presence of the externality produced by the terrorist organization in region 1 that reduces the tax authorities' ability to set  $\beta_1$ . The problem of tax authority in region 1 is then:

$$\text{Max}_{\beta_1} R_1(\beta_1, E; a, t_1, t_2, \beta_2) = n_1 \times r_1 = \left( \frac{1}{2} + \frac{[\theta_2 - \theta_1 + g_2 - g_1] - E}{2a} \right) \times [\theta_1 - d(\beta_1)],$$

where  $\theta_1 \equiv t_1 \times [\alpha + (1 - \alpha) \times \tau \times \beta_1]$  is defined as the effective tax rate in region 1,  $d(\beta_1)$  represents the tax administration cost such that  $d'(\beta_1) > 0, d(\beta_1)'' > 0$  and  $r_1 \equiv \frac{R_1}{n_1} = [\theta_1 - d(\beta_1)]$  is the unitary tax revenue. Tax authority in region 2 faces the symmetric problem. The FOCs of these problems are then:

$$\frac{\partial r_1}{\partial \beta_1} = - \frac{2a}{U_1^* - U_2^* - E + a} \times n_1'_{\beta_1} \times r_1 > 0 \quad (5)$$

and

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<sup>10</sup> In particular, it is possible to show that  $\beta_1$  and  $\beta_2$  are strategic complements. For a formal derivation, see Durán-Cabré *et al.* (2015), in particular equation (6).

$$\frac{\partial r_2}{\partial \beta_2} = \frac{2a}{U_2^* - U_1^* + E + a} \times n_1'_{\beta_2} \times r_2 > 0 \quad (6)$$

The left hand side of both equation (5) and equation (6) represents, for each region, the marginal benefit of increasing  $\beta_i$ , while the right hand side represents the corresponding marginal cost. In particular, since  $n_1'_{\beta_1} < 0$  and  $n_1'_{\beta_2} > 0$ , the marginal cost is positive in both cases. If we examine the denominator on the right hand side of both equations, it can be seen that the presence of costs related to terrorism ( $E$ ), by affecting  $n_1$  and  $n_2$ , increases the marginal cost of tax enforcement in region 1 while relaxing it in region 2. Consequently, the optimal level of  $\beta_1$  ( $\beta_2$ ) turns out to be lower (higher) than in the absence of terrorism. In other words, at this stage, given the exogenous level of  $a$ ,  $t_1$  and  $t_2$ , the tax administration of region 1 has to compensate for the costs of terrorism by relaxing its enforcement of existing tax legislation.

### The equilibrium

Multiple equilibria are possible and for simplicity  $t_1 = t_2 = t$  is assumed. It is possible to show that in equilibrium  $\beta_1 < \beta_2$  as long as  $E > 0$ . Then, depending on the capacity of the tax authority in region 1 to maintain the individuals indifferent to living in either region 1 or 2, given the level of  $E$ , it is possible to describe the migration equilibrium in this way:

$$\begin{aligned} n_1 &< \frac{1}{2} < n_2 && \text{if } U_1^* < U_2^* + E \\ n_1 &= n_2 = \frac{1}{2} && \text{if } U_1^* = U_2^* + E \end{aligned} \quad (7)$$

Applying the inverse function theorem to equation (5), the reaction function of  $\beta_1$  is derived with respect to  $E$  in order to determine the nature of the externalities in tax administration due to the cost of terrorism:

$$\frac{\partial \beta_1}{\partial E} = - \frac{n_{1E} \times r_{1\beta_1}}{R_{1\beta_1\beta_1}(\beta_1, E; a, t_1, t_2, \beta_2)} = - \frac{-\frac{1}{2a} \times r_{1\beta_1}}{R_{1\beta_1\beta_1}(\beta_1, E; a, t_1, t_2, \beta_2)} < 0 \quad (8)$$

The first term of the numerator is the marginal loss of population in region 1 due to the costs of terrorism and it is negative; the term  $r_{1\beta_1}$  is the marginal unitary tax revenue that is positive under the FOC. According to the second order condition of the administration's problem, the denominator of equation 8 is negative. The slope of the reaction function is then negative. Thus, equation 8 shows that the cost of terrorism ( $E$ ) causes a negative externality on tax enforcement set by the regional administration.

The individual perceived enforcement  $\beta_i^e(\beta_i, X)$  positively depends on the actual tax enforcement rate and, consequently, it follows that the costs of terrorism also reduce the individual's perceived level of enforcement:

$$\frac{\partial \beta_1^e}{\partial E} = - \frac{n_{1E} \times r_{1\beta_1}}{R_{1\beta_1\beta_1}(\beta_1, E; a, t_1, t_2, \beta_2)} \times \frac{\partial \beta_1^e}{\partial \beta_1} = - \frac{-\frac{1}{2a} \times r_{1\beta_1}}{R_{1\beta_1\beta_1}(\beta_1, E; a, t_1, t_2, \beta_2)} \times \frac{\partial \beta_1^e}{\partial \beta_1} < 0 \quad (9)$$

The next section tests this result empirically.

## THE EMPIRICAL FRAMEWORK

The theoretical model developed in the previous section advances an interesting result that requires empirical investigation. Terrorism operates as a negative externality on tax administration by constraining the tax authority's ability to enforce existing tax legislation in the region affected by terrorism. Because of individual mobility and thanks to tax autonomy, the tax authority reacts to the higher costs of terrorism being borne by taxpayers by reducing the level of tax enforcement so as not to lose tax bases (equation 8). The perceived tax enforcement is a function of the information that individuals have on the actual enforcement policy. More precisely, individuals' perception of tax enforcement positively depends on the actual tax enforcement. Thus, by impacting the actual policy, terrorism also affects tax enforcement as it is perceived by individuals, this being lower the higher the costs related to terrorism (equation (9)). With the aim of testing these theoretical predictions, tax enforcement as it is perceived by individuals in Spain is employed here as a dependent variable. This section also describes the empirical strategy employed to identify the changes in this variable that are due to the externality produced by terrorism in the setting of the actual policy. In particular, the aim is to isolate this effect from those changes determined by other structural factors that may alter the real tax enforcement or the individual component of the perceived enforcement. Indeed, the perceived tax enforcement might also vary due to the variation of individual personal characteristics. Thus, in the absence of data on tax enforcement policies performed by tax authorities at the regional level, individual perceptions of tax enforcement, once filtered by potential confounders, can play the right role as a measure of tax enforcement effectiveness. In this light, as suggested in the introduction, the perceived tax enforcement can be used as a direct proxy for the effectiveness of the actual policy, since what matters about the decision to evade is taxpayers' perception of the tax audit probability. If taxpayers' perceived probability of detection increases, the tax authority's capacity or effectiveness to enforce tax compliance is boosted. Therefore, taxpayers' mobility also depends on the way they perceive tax policies, including tax enforcement. In order to perform the analysis,

a data set based on the information provided by surveys and data from different Spanish sources is constructed. Specifically, data from the 1994–2015 waves of the survey ‘Public Opinion and Fiscal Policy’<sup>11</sup>, conducted annually and released by the Spanish Centre of Sociological Research (Centro de Investigaciones Sociológicas – CIS), are used. This repeated cross-section survey reports information on subjective perceptions of the fiscal policies, public provided goods and services, and other aspects of the tax system in Spain. Socioeconomic information about the respondents and their province of residence is also included in the survey data. In order to define the dependent variable, the following question is employed: “Do you think that the tax administration is currently taking many/quite a few/a few/very few steps in its efforts to fight tax evasion?”<sup>12</sup>, which remains unchanged over the period 1994-2015. For any respondent  $i$  in province  $j$  in survey year  $t$ , the answer to this question is coded into the variable  $\beta^e_{ijt}$  which is scaled from very low (1) to very high (4) according to the answer. Thus, by defining  $\beta^e_{ijt}$  as an ordinal dependent variable measuring the latent actual perceived tax enforcement of individuals ( $\beta^{e*}_{ijt}$ ), one can design an ordered response model (e.g. Greene, 2002, p. 736) to test the hypothesis raised in equation (9):

$$\beta^{e*}_{ijt} = \mu Truce_{jt} + \pi Truce_{jt} \times Foral_{ijt} + \rho Foral_{ijt} + Y_{ijt}\psi + X_{jt}\alpha + \vartheta_j + \tau_t + \varepsilon_{ijt}$$

$$\beta^e_{ijt} = \begin{cases} 1 & \text{if } \beta^{e*}_{ijt} \leq \omega_1 \\ 2 & \text{if } \omega_1 < \beta^{e*}_{ijt} \leq \omega_2 \\ 3 & \text{if } \omega_2 < \beta^{e*}_{ijt} \leq \omega_3 \\ 4 & \text{if } \beta^{e*}_{ijt} > \omega_3 \end{cases} \quad (10)$$

The coefficients as well as the cut-points in equation (10) are estimated through an ordered probit model by means of maximum likelihood techniques. In order to measure the costs generated by ETA’s terrorist activity, an approach is employed that is standard in the literature (e.g., Abadie and Gardeazabal, 2003), and is based on the use of information about ETA’s truces and ceasefires<sup>13</sup>. A dummy variable equal to 1

<sup>11</sup> All annually released surveys are based on personal interviews conducted with a representative sample of 2500 Spaniards over the age of 18. The complete contents of the survey are available at the CIS website (<http://www.cis.es>).

<sup>12</sup> The original question in Spanish is “¿Cree Ud. que, en la actualidad, la Administración hace muchos, bastantes, pocos o muy pocos esfuerzos para luchar contra el fraude fiscal?” (e.g. question n. 21 of the survey n. 2994 released in 2013, as the numbering of the questions might change from year to year).

<sup>13</sup> Apart from  $Truce_{jt}$ , three alternative direct proxies of ETA's terrorist activity have been employed: the number of fatalities attributed to ETA in any Spanish province/year; the total pecuniary compensation for the damage caused by terrorism provided by the Spanish Ministry of the Interior; and an estimation of the total revenues obtained by ETA through the ‘revolutionary tax’ in the foral provinces.

is constructed for the years in which a truce was announced and implemented by ETA. Specifically,  $Truce_{jt}$  is defined as being equal to one if a ceasefire were announced and implemented by ETA in province  $j$  during the survey year  $t$ , that is, during a period of time within the 12 months previous to the implementation of the survey<sup>14</sup>. This variable indirectly measures the costs of ETA's activity in terms of the threat to personal security and provincial stability and the coefficient  $\mu$  measures its impact on the perceived tax enforcement.

According to the theoretical model, terrorism should negatively impact tax enforcement and its perception in the areas most affected by terrorist activity in Spain, namely, the four provinces belonging to the foral autonomous communities of the Basque Country and Navarre. Thus, an interaction term between  $Truce_{jt}$  and  $Foral_{ijt}$  – a dummy variable equal to 1 for residents in the foral provinces – is employed and the correspondent coefficient  $\pi$  is expected to be positive.<sup>15</sup> This term picks up the differential effect of terrorism on perceived tax enforcement in the foral communities with respect to common regime provinces. Similarly, the overall impact of terrorism on perceived tax enforcement in foral provinces is also expected to be positive. This effect is represented by the linear combination between the interacted and the un-interacted terms that is the derivative of the latent perceived tax enforcement with respect to the variable  $Truce_{jt}$  if  $Foral_{ijt}$  is equal to 1 (i.e. the estimated sum of coefficients  $\mu + \pi$ ). In order to control for the residual effect of being resident in a province belonging to the foral financing system on the perceived tax enforcement, the variable  $Foral_{ijt}$  not interacted is also included.

According to the assumption of the theoretical model, the perceived tax enforcement is a function of the information that individuals have on the actual enforcement policy. In particular, actual tax enforcement and the individuals' perception of it are expected to be positively related. In order to disentangle the changes in perceived tax enforcement due to the externality produced by terrorism in the setting of the actual tax enforcement from those changes determined by other structural factors that may alter the real tax enforcement, included in vector  $X_{jt}$  is information on contextual variables that directly affect the setting of the enforcement policy and provincial fixed effects ( $\vartheta_j$ ) are employed. In this way, one is

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<sup>14</sup> An announced truce is considered as being implemented by ETA in a specific province/year if during that period ETA did not claimed fatalities in that province. The possibility to let this variable vary not only over time but also across provinces is of particular interest for the analysis since in the territories belonging to the foral regime the tax authorities are appointed to operate at this level of government. Information on truces and on fatalities is extracted from the data set of the Spanish Ministry of the Interior.

<sup>15</sup> Since the variable  $Truce_{jt}$  is indirectly related to the level of terrorist activity, according to equation (9), its coefficient is expected to be positive and significant for foral communities.

implicitly controlling for the structural component of the actual policy. Specifically, vector  $\mathbf{X}_{jt}$  controls for per-capita provincial GDP, provincial population, and also includes dummies for rightist central government, country electoral cycle, leftist regional government, regional electoral cycle.

In the theoretical model, it has also been assumed that the perceived tax enforcement is a function of individual personal characteristics. In order to account for the individual component of perceived enforcement, the vector of variables  $\mathbf{Y}_{ijt}$  collects information on relevant personal and social characteristics that are likely to influence the individual's perception of the risk of being audited. These variables are also extracted from the survey "Public Opinion and Fiscal Policy". Specifically, the vector includes controls for sex, age, level of education, civil status, job market status (including a dummy for employed people, a dummy for retired people and a dummy for employees employed in the public sector) as well as respondents' political views (including dummies for leftist voter, nationalist voter and a set of dummies for the political parties that respondents declared to vote for). The vector also includes a dummy for the main contributors to households' income (heads of household), a dummy identifying entrepreneurs or liberal professionals with employees (self-employed), and a control for the size of the municipality of residence of the respondents. Finally, common time effects ( $\tau_t$ ) are included to account for common time trends, such as the aggregated component of the economic cycle at the national level, while  $\epsilon_{ijt}$  is the error term.

As emphasized in the introduction, Basque and Navarrese entrepreneurs and professionals constitute the cluster of individuals that are most affected by the costs of terrorism, as a result of their exposure to blackmailing and due to the potential direct and indirect costs to their businesses. This makes these self-employed workers a specific target for potential tax enforcement cutbacks by the foral tax authorities. Therefore, it is suspected that that terrorism may have a stronger impact on the perceived tax enforcement of self-employed workers resident in the Basque Country and Navarre. For this reason, equation (10) is extended by further interacting the term  $Truce_{jt} \times Foral_{ijt}$  with the dummy  $SE_{ijt}$ :

$$\begin{aligned} \beta^{e*}_{ijt} &= \gamma Truce_{jt} + \xi Truce_{jt} \times Foral_{ijt} + \eta Truce_{jt} \times Foral_{ijt} \times SE_{ijt} + \varphi SE_{ijt} + \lambda Foral_{ijt} \\ &\quad + \mathbf{Y}'_{ijt} \boldsymbol{\sigma} + \mathbf{X}'_{it} \boldsymbol{\alpha} + \vartheta'_j + \tau'_t + \epsilon_{ijt} \\ \beta^e_{jit} &= \begin{cases} 1 & \text{if } \beta^{e*}_{jit} \leq w_1 \\ 2 & \text{if } w_1 < \beta^{e*}_{jit} \leq w_2 \\ 3 & \text{if } w_2 < \beta^{e*}_{jit} \leq w_3 \\ 4 & \text{if } \beta^{e*}_{jit} > w_3 \end{cases} \end{aligned} \quad (11)$$

Analogous with what is explained above, the coefficient  $\eta$  is estimating the differential effect of terrorism on perceived enforcement of self-employed people resident in a foral province and the correspondent overall effect is given by the estimated sum of coefficients  $\gamma + \xi + \eta$ . It is expected that both are positive and significant. In order to facilitate the interpretation of the magnitude of the coefficients and as a robustness analysis, one also collapses the dependent variable in equations (10) and (11) into a binary variable taking value 1 if the individual declares a relatively high perceived tax enforcement ( $\beta^e_{jit} \in \{3,4\}$ ) and 0 otherwise and the coefficients are estimated through a probit model.

With the exception of the dependent variable, the indirect proxy of the costs of terrorism ( $Truce_{jt}$ ) and of the individual personal characteristics discussed above, the other variables are obtained from the following statistical sources. The provincial per-capita GDP and the provincial population are provided by the Spanish National Institute of Statistics (INE). The dummies identifying rightist government in office and elections are based on information extracted from the electoral database of the Spanish Ministry of the Interior. Table 1 reports the summary statistics.

[TABLE 1]

## MAIN RESULTS

Table 2 reports the results of the model expressed in equation (10). More precisely, column 4 presents the results obtained estimating equation (10) by means of an ordered probit model including all the control variables. Columns 1 to 3 estimate more parsimonious ordered probit models where just some of the explanatory variables are included. Table's 2 structure is coherent with the filtering process presented in the estimation strategy. Specifically, column 1 reports by way of a baseline estimation a model without including personal characteristics of the respondent ( $Y_{ijt}$ ) and contextual variables ( $X_{jt}$ ), columns 2 and 3 include alternatively  $Y_{ijt}$  and  $X_{jt}$  as control variables. Fixed effects at provincial level and time effects are included in any specification. The different number of observations is due to coverage of the CIS surveys for the relevant questions; all the available observations are used in every regression. Using the interpretation given for the latent variable, it is possible to interpret the estimated coefficients in terms of the marginal effects of the regressors on the latent perceived tax enforcement  $\beta^{e*}_{jit}$ <sup>16</sup>. Finally, the

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<sup>16</sup> The coefficients can always be interpreted as the marginal effects of the regressors on the latent variable, which is particularly useful in contexts such as that analysed here, where the latent variable can be given some easily interpretable meaning and it is not a mere modelling device (e.g., Wooldridge, 2002).

coefficients collected in column 5 represent the results of the probit model obtained redefining the endogenous variable in a dichotomous way.

In all models, the indirect proxy for the cost of terrorism ( $Truce_{jt}$ ) significantly impacts the individuals' perceived tax enforcement in a way that is consistent with the theory. In particular, this variable has a significant impact on the perceived tax enforcement of individuals residing in the foral provinces – the interacted terms  $Truce_{ijt} \times Foral_{ijt}$  and the corresponding linear combination with  $Truce_{jt}$  are significant and positive in all the specifications – but it does not have any effect on the tax enforcement perceived by the rest of the individuals interviewed (the un-interacted terms  $Truce_{jt}$  are not significantly different from zero). In other words, the tax enforcement as it is perceived by individuals residing in the foral provinces is significantly higher during periods of terrorist inactivity, while there are not significant differences in the perceived tax enforcement of individuals residing in the rest of Spain. Thus, this result suggests that while terrorism represents an externality in the tax-enforcement-setting process for the foral tax authorities, it does not impact at all on the setting of auditing policies in the provinces belonging to the common tax regime, which are administered by a central agency.

As for the other variables, it is found that the dummy variable  $Foral_{ijt}$  is negative and significant. This result may well be evidence of the competitive behaviour of the foral provinces or more generally it might record a generally lower level of enforcement in the foral communities. The entrepreneurs and liberal professionals (dummy  $SE_{ijt}$ ) are found to report a higher perceived tax enforcement than that reported by the rest of the population, which makes sense because their probability of being audited is higher as they have more opportunities to evade taxes. Concerning the other survey control variables, it is possible to observe that the perceived tax enforcement tends to be lower in bigger municipalities while it increases with the age of the interviewed person. The coefficients of left-wing voters and females are negative which might entail a demand for stricter enforcement of the existing tax rules by these clusters. The coefficient of the per-capita provincial GDP is negative. This result suggests that tax enforcement effectiveness tends to present on average a counter-cyclical trend<sup>17</sup>. Finally, the perceived tax enforcement is increasing in the size of provincial population and it tends to be higher in presence of rightist central governments and during electoral years.

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<sup>17</sup> The issue of potential cyclicity of tax enforcement is theoretically analysed by Andreoni (1992) and empirically tested by Durán-Cabré et al. (2018). Their results confirm this prevailing counter-cyclical trend for Spain, but suggest that in the presence of a severe economic crisis, tax enforcement turns out to be pro-cyclical.



[TABLE 2]

Table 3 presents the results of the estimation of equation (11). Its structure replicates that of Table 2. The impact of ETA's terrorist activity on the perceived tax enforcement of the residents in the foral provinces is even stronger for the cluster of entrepreneurs and liberal professionals, as the interacted terms and linear combinations of interacted and un-interacted coefficients show. Finally, both Table 1 and 2 include several indexes of goodness to fit (i.e. the log-likelihood; the McKelvey and Zavoina's  $R^2$ ; the  $R^2_{Count}$  measuring the proportion of correct predictions; the Akaike's information criterion (AIC) and the Bayesian information criterion (BIC)) in order to guide model selection. These tend to indicate that the full ordered response model estimating equation (11) (column 4, Table 3) outperforms the other ordered response models and thus this is considered the final model<sup>18</sup>.

Thus, the results of the analysis performed here show that in the presence of more intense terrorist activity, individuals residing in the foral territories perceive a lower level of tax enforcement. This confirms that the costs of terrorism do represent a negative externality for the foral communities. In particular, the impact of the cost of terrorism is significantly stronger for self-employed people confirming that the foral tax authorities might find it convenient to react to the externalities attributable to terrorism by reducing tax enforcement in particular for this group of people.

[TABLE 3]

As a robustness check, a multilevel version of both the complete ordered probit and probit models is also performed (e.g. De Leeuw and Meijer, 2008; Goldstein, 2011 and Hedeker, 2008), which confirms and reinforces the results of the main analysis. These results are reported in Appendix B. As a further robustness check, ordered logit and logit models are also estimated, obtaining results congruent with the main analysis.<sup>19</sup> A final robustness check consists of a placebo test that furthers the analysis on the provinces of Madrid and Barcelona. These have also been frequent targets of ETA's attacks, but terrorism is not expected to operate as a negative externality on tax enforcement there. This is confirmed by the analysis presented in detail in Appendix C in the supplemental data online. Indeed, the placebo test

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<sup>18</sup> Probit models tend to outperform ordered response models, but since these models are based on a way the dependent variable was recoded into a binary one, they cannot be directly compared with the ordered probit models, and this is considered as a robustness check.

<sup>19</sup> These results are available from the author upon request.

corroborates the main hypothesis of the paper that the reaction on the part of the tax administration is a result of the combination of tax autonomy and permanent threat of terrorism.

### **FURTHER RESULTS: ALTERNATIVE MEASURES OF THE COST OF TERRORISM**

This section performs an additional robustness analysis by employing three different direct measures of the costs of terrorism alternative to the indirect proxy  $Truce_{jt}$ .<sup>20</sup> Specifically, it employs as a measure of the aggregate costs of terrorism the pecuniary compensation for the damages caused by ETA provided by the Spanish Ministry of the Interior<sup>21</sup> on a national and annual basis.<sup>22</sup> This variable is defined at the national level, as it is a proxy of the ETA terrorist costs for the affected economy. Alternatively, the section employs a variable collecting information on the number of fatalities attributed to ETA in any Spanish province/year and, thus, directly identifies the costs generated by ETA in terms of the threat to personal security and provincial stability.<sup>23</sup> Finally, it employs an estimate of the total revenues obtained by ETA through the extortion of the ‘revolutionary tax’ in the foral provinces. This estimate is obtained by Buesa and Baumert (2013) employing documents seized from ETA by the Spanish anticorruption prosecution agency and, therefore, it is likely to be downward biased and measured with error. This variable is set as being equal to zero for the rest of the country and, consequently, no interaction term is calculated. Since all these variables directly measure the cost of terrorism, a significant negative coefficient for the interacted terms and linear combinations of interacted and uninteracted terms are expected.

Table 4 presents the results of the estimation of equation (10) employing these alternative direct proxies of the costs of terrorism. Each model includes individual characteristics, contextual-level characteristics, provincial fixed effects and time effects. Column 1 replicates the results presented in column 4 of Table 2 employing the variable  $Truce_{jt}$ ; the other models substitute this variable by one of the above-mentioned direct measures of the costs of terrorism. The results of these models are qualitatively equivalent to those

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<sup>20</sup> See footnote 13.

<sup>21</sup> Compensations include personal as well as material damages. These data are extracted from the statistical report annually released by the Spanish Ministry of the Interior (for the 2013 report, see <http://goo.gl/GEwg2R>).

<sup>22</sup> These data are aggregated at the national level and do not distinguish between the compensation paid out to the victims of ETA from that paid out to the victims of other terrorist organizations. Nevertheless, the author excluded data referring to the 2004 Al-Qaeda terrorist attack, and as 96.5% of the fatalities/injuries of terrorism in Spain are attributable to ETA, it seems these measures provide a reasonable approximation of the damage caused by ETA's activity.

<sup>23</sup> This frequently used indicator has been criticized since it tends to underestimate the degree of terrorist activity (Frey, Luechinger, & Stutzer, 2007). As for  $Truce_{jt}$ , this variable is defined by considering the survey year, and it is extracted from the data set of the Spanish Ministry of the Interior.

obtained when employing  $Truce_{jt}$  as the interacted terms and linear combinations of interacted and uninteracted coefficients show. This corroborates the previous analysis.

[TABLE 4]

Finally, Table 5 reports the results of the estimation of equation (11) employing these alternative variables. The structure replicates that used in Table 4 and includes the additional interactions with the dummy for self-employed. The main result still holds for any specification while, in this case, the impact of terrorism on the perceived tax enforcement does not seem to be stronger for the cluster of self-employed in the foral provinces.

[TABLE 5]

## CONCLUSIONS

This paper has analysed within an asymmetric federal framework the impact of externalities due to terrorism on tax enforcement effectiveness measured in terms of perceived tax enforcement. According to the reduced-form model, by acting as a negative shock to the economy and thus altering individuals' incentives to reside in their home region, terrorism constrains the tax authority's ability to set tax enforcement policies in the affected region. The lower regional effectiveness in enforcing tax compliance is reflected in lower taxpayers' perceived tax enforcement. This hypothesis has been tested for the Basque Country and Navarre within the Spanish framework. By employing surveys as well as data extracted from other statistical sources, ordered response models whose outcomes corroborate the theory have been estimated.

The results of the empirical analysis show that terrorism negatively and significantly impacts the perceived tax enforcement of individuals residing in the Basque and Navarrese provinces, with a more marked effect on self-employed workers. No significant effect is reported for the residents in Spanish common-regime provinces, where the main taxes are administered by the central government. Thus, terrorism acts as a negative externality on the effectiveness in enforcing tax compliance only in the provinces where it represents a substantial and persistent cost that may significantly affect the residents' incentives to move. This is the main contribution of the paper.

Conceptually, terrorism might represent an additional cost in terms of revenue losses for the Basque and Navarrese provinces if taxpayers' threat to move materializes in a significant way. Abadie and Gardeazabal's (2003) results are implicitly calculated net of this effect, and so they could be considered as a lower bound of the impact of terrorism on the Basque economy. Nevertheless, as a result of tax autonomy, the tax administrations in foral provinces may strategically use tax enforcement as an instrument to mitigate the mobility of tax bases and counteract the negative effect of terrorism on tax revenues and definitely on the economy. Certainly, this is not costless because a reduced capacity to uncover evasion in periods of more intense terrorist activity has also a negative impact on tax revenues, but this is likely to be significantly lower than the counterfactual revenue losses due to higher mobility of tax bases. The stable presence of the Basque Country and Navarre among the richest regions in Spain seems to be a casual (coarse) evidence of this. Furthermore, according to the results of the analysis, the tax authorities may well have compensated this negative enforcement revenue effect by setting higher tax enforcement during periods of relative inactivity of ETA. All in all, the paper confirms the evidence presented in related literature that tax enforcement (Durán-Cabré, Esteller-Moré, & Salvadori, 2018) and in particular tax autonomy in enforcement policies (e.g., Durán-Cabré et al., 2015, 2016) provide an additional instrument to tax authorities that may be employed for strategic interaction or to counteract negative shocks to the economy. Given that ETA announced its definitive dissolution in 2018, future research should investigate the impact of this event on the capacity of foral tax administrations to enforce tax compliance.

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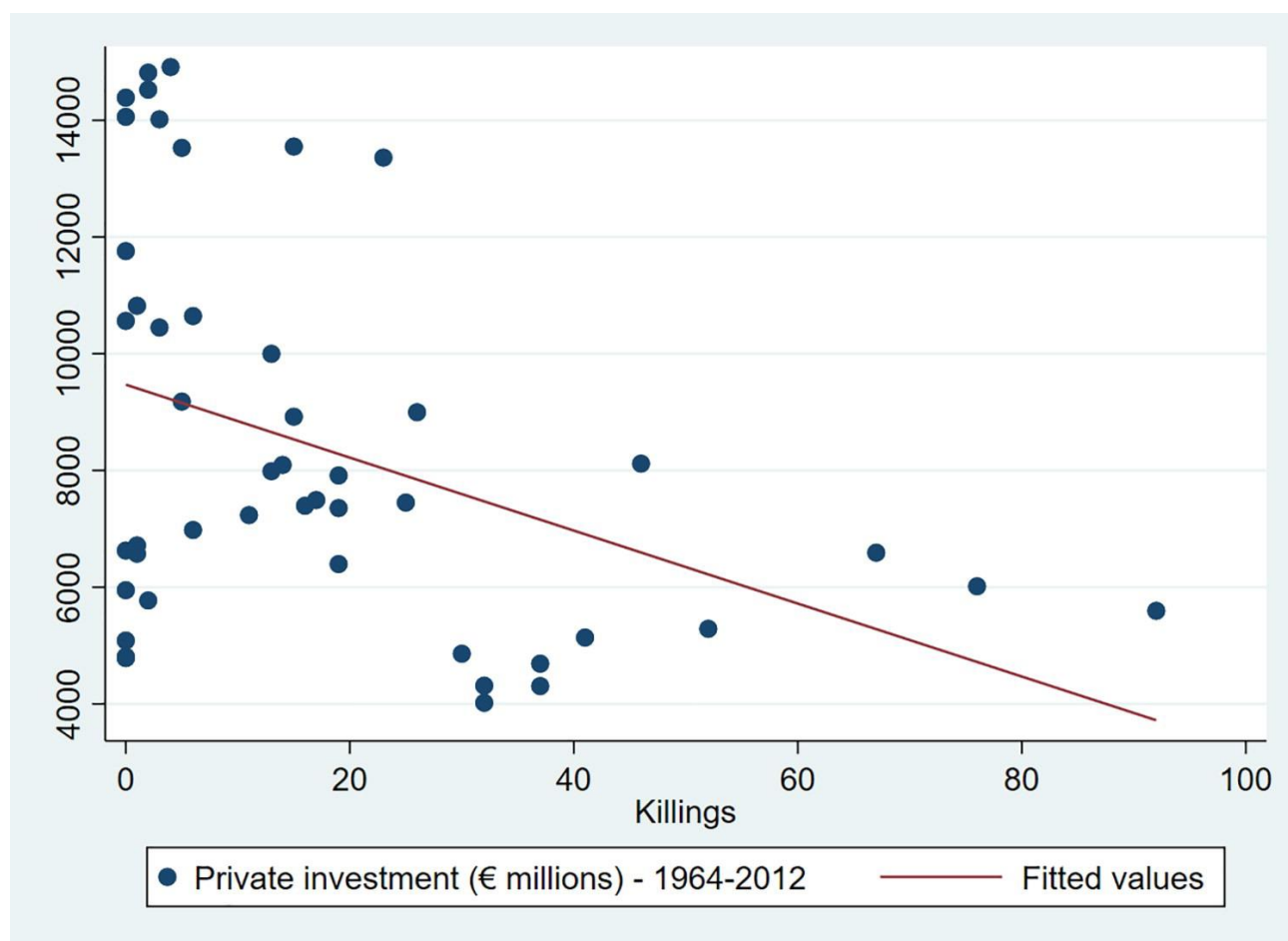
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## FIGURES AND TABLES

**Figure 1: Relationship between investments and terrorist activity in the Basque Country and Navarre (1964-2012)**



**Table 1: Summary Statistics**

Variable	Measurement Unit	Observations	Mean	Std. Dev.	Min	Max
<b>Key variables</b>						
Perceived Tax Enforcement	Ranking 1 to 4	47497	2.35	0.81	1	4
Truce	Dummy	54558	0.48	0.50	0	1
<b>Individual Characteristics</b>						
Female	Dummy	54558	0.51	0.50	0	1
Age	Years	54547	46.33	18.14	18	99
Civil Status (married)	Dummy	54514	0.39	0.49	0	1
Household head	Dummy	54558	0.46	0.50	0	1
Worker	Dummy	54558	0.45	0.50	0	1
Retired	Dummy	54532	0.45	0.50	0	1
Public Employee	Dummy	54558	0.18	0.39	0	1
Self_Employed	Dummy	54558	0.16	0.36	0	1
Foral	Dummy	54558	0.07	0.25	0	1
Municipality size	Ranking	54558	3.24	2.14	0	7
Nationalist	Dummy	54558	0.07	0.25	0	1
Left	Dummy	54558	0.02	0.12	0	1
<b>Social context characteristics</b>						
Righthist Central Government	Dummy	54558	0.50	0.50	0	1
Per_Capita_GDP	Euros per capita	54558	21824.99	6410.42	9314.08	60220.40
Population	Thousands of People	54558	2094.38	2011.32	90.70	6461.97
Country Electoral Cycle	Dummy	54558	0.27	0.45	0	1
Leftist Regional Government	Dummy	54558	0.37	0.48	0	1
Regional Electoral Cycle	Dummy	54558	0.27	0.45	0	1
<b>Alternative measures for the cost of terrorism</b>						
Killings_prov	Units	54558	0.26	1.05	0	10
Monetary_Compensation	Millions of Euros	54558	4.43	3.01	0.50	12.91
Extortion_(Foral)	Millions of Euros	53415	0.12	0.81	0.00	10.42

**Table 2: Impact of terrorism on perceived tax enforcement (1994-2015). Interaction Foral.**

Dependent variables	Perceived Tax Enforcement - PTE (Ordered Probit Models)				PTE01 (Probit)
	(1)	(2)	(3)	(4)	(5)
Truce	0.031 (0.665)	0.039 (0.825)	0.031 (0.656)	0.037 (0.790)	0.003 (0.066)
Truce×Foral	0.156*** (3.881)	0.154*** (3.777)	0.193*** (4.729)	0.191*** (4.592)	0.173*** (3.411)
Foral	-0.180*** (-3.871)	-0.192*** (-4.056)	-0.353*** (-5.715)	-0.360*** (-5.770)	-0.332*** (-4.305)
SE		0.064*** (2.748)		0.065*** (2.794)	0.051* (1.890)
Municipality Size		-0.006* (-1.783)		-0.007* (-1.946)	-0.001 (-0.215)
Nationalist voter		0.006 (0.142)		0.001 (0.028)	-0.020 (-0.401)
Left		-0.042*** (-3.951)		-0.042*** (-3.959)	-0.069*** (-5.460)
Female		-0.023** (-1.987)		-0.023** (-1.987)	-0.032** (-2.269)
Age		0.001*** (3.478)		0.001*** (3.535)	0.002*** (5.344)
Head of household		-0.012 (-0.978)		-0.013 (-1.027)	0.003 (0.213)
Married		0.001 (0.117)		0.001 (0.120)	0.005 (0.346)
Employed		0.009 (0.677)		0.009 (0.718)	0.003 (0.211)
Retired		-0.002 (-0.124)		-0.002 (-0.107)	-0.024 (-1.161)
Public Employee		-0.001 (-0.059)		0.000 (0.014)	-0.015 (-0.931)
Per Capita provincial GDP			-0.000*** (-3.740)	-0.000*** (-3.547)	-0.000** (-2.250)
Provincial population			0.000*** (4.277)	0.000*** (4.486)	0.000*** (3.668)
Righthist Central Government			0.198*** (5.694)	0.211*** (6.052)	0.251*** (5.722)
Country Electoral Cycle			0.176*** (4.858)	0.168*** (4.652)	0.146*** (3.375)
Leftist Regional Government			0.020 (1.163)	0.018 (1.068)	0.025 (1.171)
Regional Electoral Cycle			-0.006 (-0.436)	-0.008 (-0.557)	-0.006 (-0.358)
<b>Linear Combinations</b>					
Truce+Truce×Foral	0.187*** (3.18)	0.193*** (3.25)	0.223*** (3.76)	0.228*** (3.79)	0.176** (2.54)
Observations	47497	47382	47497	47382	47382
Log likelihood	-55099.008	-54731.406	-55082.804	-54714.936	-30490.425
Wald chi2 (All variables)	3388.040	3851.748	3430.826	3894.658	3552.437
p-value	0.000	0.000	0.000	0.000	0.000
R <sup>2</sup> <sub>M&amp;Z</sub>	0.08	0.09	0.08	0.10	0.12
R <sup>2</sup> <sub>Count</sub>	0.46	0.46	0.46	0.46	0.62
AIC	110348	109676.8	110323.6	109651.9	61198.85
BIC	111005.6	110614.8	111016.3	110624.9	62154.34

Note: z statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Each model includes YEAR and PROVINCIAL fixed effects. Models 2, 4 and 5 also include a set of dummies for the political parties that respondents declared to vote for. R<sup>2</sup><sub>M&Z</sub> is McKelvey and Zavoina's R2; R<sup>2</sup><sub>Count</sub> is the proportion of correct predictions; AIC is the Akaike's information criterion; BIC is the Bayesian information criterion.

**Table 3: Impact of terrorism on perceived tax enforcement (1994-2015). Interaction Foral & SE**

Dependent variables	Perceived Tax Enforcement - PTE (Ordered Probit Models)				PTE01 (Probit)
	(1)	(2)	(3)	(4)	(5)
Truce	0.031 (0.671)	0.038 (0.818)	0.031 (0.664)	0.037 (0.785)	0.003 (0.064)
Truce×Foral	0.144*** (3.546)	0.144*** (3.473)	0.181*** (4.397)	0.180*** (4.288)	0.168*** (3.287)
Truce×Foral×SE	0.265* (1.839)	0.258* (1.793)	0.265* (1.832)	0.258* (1.787)	0.104 (0.586)
Foral	-0.176*** (-3.784)	-0.191*** (-4.023)	-0.350*** (-5.669)	-0.359*** (-5.750)	-0.331*** (-4.297)
SE	0.062*** (2.698)	0.057** (2.442)	0.063*** (2.746)	0.058** (2.488)	0.049* (1.781)
Municipality Size		-0.006* (-1.787)		-0.007* (-1.950)	-0.001 (-0.217)
Nationalist voter		0.005 (0.124)		0.000 (0.010)	-0.021 (-0.406)
Left		-0.042*** (-3.942)		-0.042*** (-3.950)	-0.069*** (-5.457)
Female		-0.023** (-1.982)		-0.023** (-1.982)	-0.032** (-2.267)
Age		0.001*** (3.480)		0.001*** (3.537)	0.002*** (5.344)
Head of household		-0.012 (-0.980)		-0.013 (-1.029)	0.003 (0.214)
Married		0.001 (0.115)		0.001 (0.117)	0.005 (0.345)
Employed		0.009 (0.716)		0.010 (0.758)	0.003 (0.224)
Retired		-0.002 (-0.106)		-0.002 (-0.089)	-0.024 (-1.154)
Public Employee		-0.001 (-0.076)		-0.000 (-0.003)	-0.016 (-0.937)
Per Capita provincial GDP			-0.000*** (-3.768)	-0.000*** (-3.550)	-0.000** (-2.252)
Provincial population			0.000*** (4.288)	0.000*** (4.486)	0.000*** (3.668)
Rigthist Central Government			0.200*** (5.754)	0.211*** (6.064)	0.252*** (5.726)
Country Electoral Cycle			0.175*** (4.830)	0.168*** (4.649)	0.146*** (3.373)
Leftist Regional Government			0.020 (1.171)	0.018 (1.047)	0.024 (1.165)
Regional Electoral Cycle			-0.006 (-0.446)	-0.008 (-0.580)	-0.006 (-0.364)
<b>Linear Combinations</b>					
Truce+Truce×Foral	0.175*** (2.97)	0.182*** (3.05)	0.212*** (3.56)	0.217*** (3.59)	0.172** (2.46)
Truce+Truce×Foral+Truce×Foral×SE	0.441*** (2.94)	0.440*** (2.93)	0.477*** (3.16)	0.475*** (3.15)	0.276 (1.50)
Observations	47497	47382	47497	47382	47382
Log likelihood	-55092.665	-54729.834	-55076.315	-54713.373	-30490.254
Wald chi2 (All variables)	3401.181	3852.951	3443.207	3895.547	3552.711
p-value	0.000	0.000	0.000	0.000	0.000
R <sup>2</sup> <sub>M&amp;Z</sub>	0.08	0.09	0.09	0.10	0.12
R <sup>2</sup> <sub>Count</sub>	0.45	0.46	0.46	0.46	0.62
AIC	110339.3	109675.7	110314.6	109650.7	61200.51
BIC	111014.5	110622.4	111024.9	110632.5	62164.77

Note: z statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Each model includes YEAR and PROVINCIAL fixed effects. Models 2, 4 and 5 also include a set of dummies for the political parties that respondents declared to vote for. R<sup>2</sup><sub>M&Z</sub> is McKelvey and Zavoina's R<sup>2</sup>; R<sup>2</sup><sub>Count</sub> is the proportion of correct predictions; AIC is the Akaike's information criterion; BIC is the Bayesian information criterion.

**Table 4: Impact of terrorism on perceived tax enforcement (1994-2015). Alternative measures for terrorist activity. Interaction Foral**

Dependent variables	PTE (Ordered Probit Models)			
	(1)	(2)	(3)	(4)
Truce	0.037 (0.790)			
Truce×Foral	0.191*** (4.592)			
Killings_province		0.011 (1.425)		
Killings_province×Foral		-0.041*** (-3.100)		
Monetary_Com			-0.017 (-0.731)	
Monetary_Com×Foral			-0.017** (-2.573)	
Extortion_(Foral)				-0.028*** (-3.225)
Foral	-0.360*** (-5.770)	-0.222*** (-3.850)	-0.163** (-2.489)	-0.167** (-2.500)
<b>Linear Combinations</b>				
Truce+Truce×Foral	0.228*** (3.79)			
Killings_province + Killings_province×Foral		-0.029*** (-2.77)		
Monetary_Com + Monetary_Com×Foral			-0.034 (-1.42)	
<i>Observations</i>	47382	47382	47382	46379
Log likelihood	-	-	-	-
Wald chi2 (All variables)	54714.936	54721.866	54722.942	53582.507
p-value	3894.658	3884.386	3882.081	3737.452
R <sup>2</sup> <sub>M&amp;Z</sub>	0.000	0.000	0.000	0.000
R <sup>2</sup> <sub>Count</sub>	0.10	0.09	0.10	0.09
AIC	0.46	0.46	0.46	0.46
BIC	109651.9	109665.7	109665.9	107385
	110624.9	110638.8	110630.1	108346.9

Note: z statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Each model includes Individual Characteristics, Contextual-level characteristics, Provincial fixed effects and Time effects. AIC is the Akaike's information criterion; BIC is the Bayesian information criterion.

**Table 5: Impact of terrorism on perceived tax enforcement (1994-2015). Alternative measures for terrorist activity. Interaction Foral & SE**

Dependent variables	PTE (Ordered Probit Models)			
	(1)	(2)	(3)	(4)
Truce	0.037 (0.785)			
Truce×Foral	0.180*** (4.288)			
Truce×Foral×SE	0.258* (1.787)			
Killings_province		0.011 (1.428)		
Killings_province×Foral		-0.040*** (-3.044)		
Killings_province×Foral×SE		-0.019 (-0.333)		
Monetary_Com			-0.017 (-0.731)	
Monetary_Com×Foral			-0.020*** (-2.949)	
Monetary_Com×Foral×SE			0.016* (1.740)	
Extortion_(Foral)				-0.028*** (-3.141)
Extortion_(Foral)×SE				-0.026 (-0.933)
Foral	-0.359*** (-5.750)	-0.222*** (-3.846)	-0.160** (-2.436)	-0.166** (-2.475)
SE	0.058** (2.488)	0.066*** (2.841)	0.061*** (2.612)	0.067*** (2.831)
<b>Linear Combinations</b>				
Truce+Truce×Foral	0.217*** (3.59)			
Truce+Truce×Foral+Truce×Foral×SE	0.475*** (3.15)			
Killings_province + Killings_province×Foral		-0.028*** (-2.70)		
Killings_province+Killings_province×Foral+Killings_province×Foral×SE		-0.047 (-0.84)		
Monetary_Com+ Monetary_Com ×Foral			-0.037 (-1.55)	
Monetary_Com+ Monetary_Com×Foral+ Monetary_Com×Foral×SE			-0.021 (-0.85)	
Extortion_(Foral) + Extortion_(Foral)×SE				-0.054*** (-1.92)
<i>Observations</i>	47382	47382	47382	46379
Log likelihood	-	-	-	-
Wald chi2 (All variables)	54713.373 3895.547	54721.769 3884.729	54721.465 3884.808	53582.224 3738.088
p-value	0.000	0.000	0.000	0.000
R <sup>2</sup> <sub>M&amp;Z</sub>	0.10	0.09	0.10	0.09
R <sup>2</sup> <sub>Count</sub>	0.46	0.46	0.46	0.46
AIC	109650.7	109667.5	109664.9	107386.4
BIC	110632.5	110649.3	110638	108357.1

Note: z statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Each model includes Individual Characteristics, Contextual-level characteristics, Provincial fixed effects and Time effects. R<sup>2</sup><sub>M&Z</sub> is McKelvey and Zavoina's R2; R<sup>2</sup><sub>Count</sub> is the proportion of correct predictions. AIC is the Akaike's information criterion; BIC is the Bayesian information criterion.

## **APPENDIX**

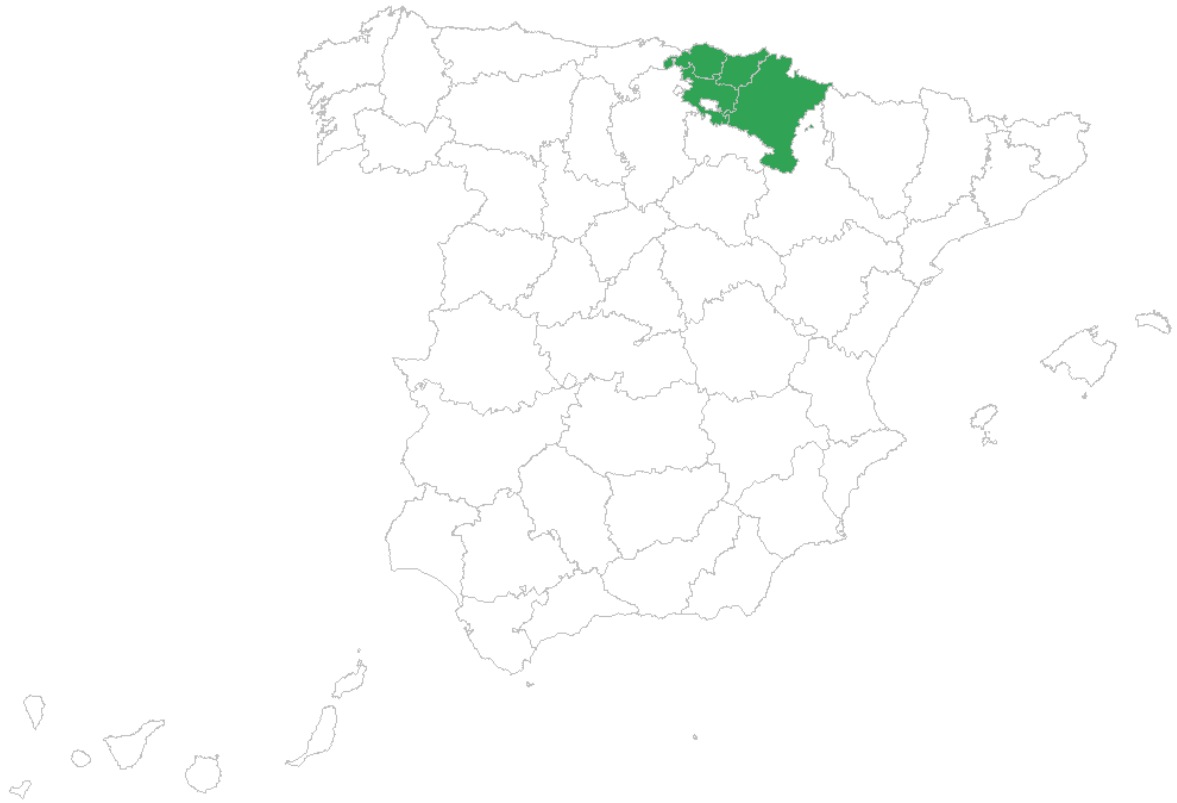
### **Appendix A**

#### **Framework background: The Basque Country and ETA**

The four provinces belonging to the Spanish autonomous communities of Navarre and the Basque Country represent the main part of the historical Basque territories: they share common cultural roots including a common language, “Euskera”, which in those regions is co-official with Spanish. They are two of the richest regions in Spain, the Basque Country being the second and Navarre the third in terms of per capita GDP among the Spanish autonomous communities according to the data of the Spanish National Institute of Statistics (INE). From a tax management perspective, the Basque Country and Navarre enjoy a special (so-called “foral”) tax regime granting them an almost full autonomy in the setting and collecting of all the taxes which grants them complete jurisdiction in determining tax law and tax administration. The foral tax authorities are appointed at the provincial level and thus the four foral provinces levy all the taxes that elsewhere are levied by the central government (including personal income tax and corporate tax). In return both autonomous communities pay an annual quota for the common public services provided by the central government (such as defense), which is agreed between the two parties on a periodical basis. An important aspect of this system is that there is no effective mechanism of equalization between the foral communities and the common regime communities<sup>24</sup>. In Figure A1, I highlight the foral communities of Navarre and the Basque Country within the Spanish national confines.

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<sup>24</sup> For more information on the differences between the foral and the common regimes e.g. Garcia-Milà and McGuire 2007.



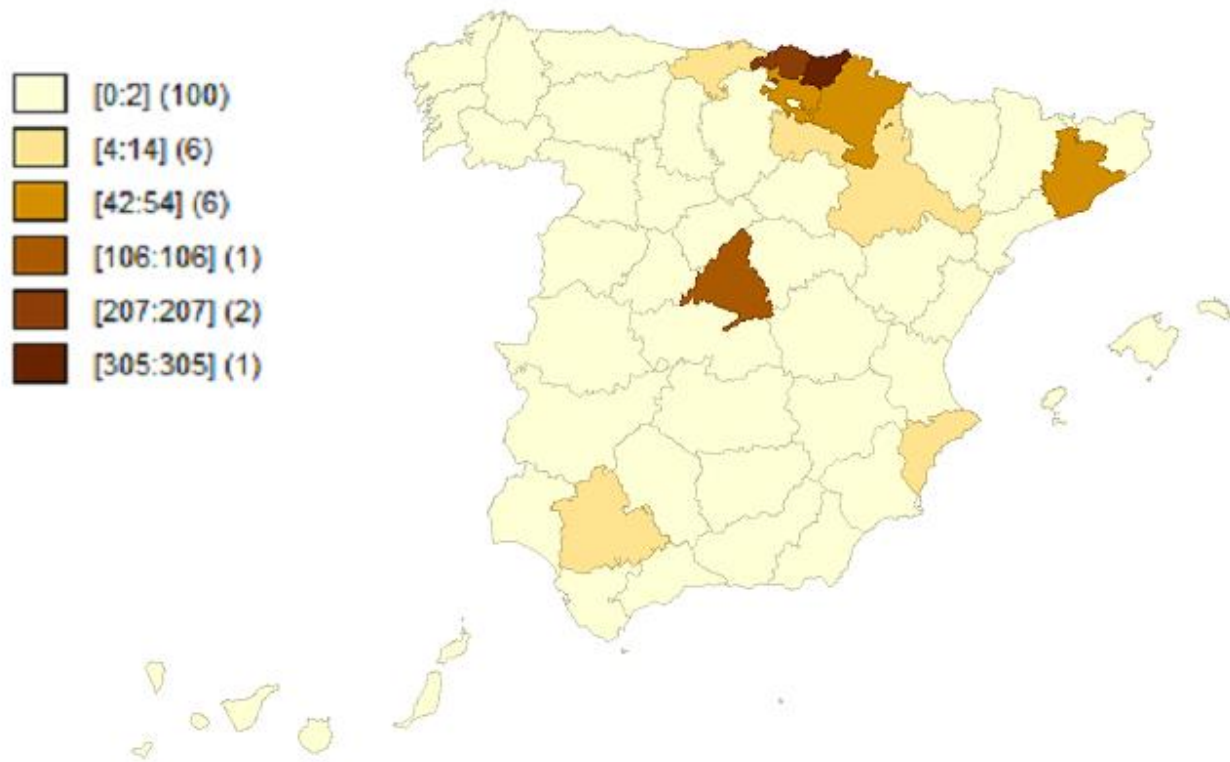
**Figure A1: The foral autonomous communities of Navarre and the Basque Country**

In this context in 1959, emerged the terrorist organization ETA (*Euskadi Ta Askatasuna*, Basque acronym for “Basque Homeland and Freedom”) with the political objective of achieving the establishment of an independent and socialist Basque state including the Spanish territories of the four foral provinces and three provinces in the south-west of France (Labourd, Lower Navarre and Soule).<sup>25</sup> ETA originally emerged as a resistance movement to Francisco Franco’s dictatorship (1939–75) and carried out its first terrorist attack in 1968. Since then its violent and paramilitary activity has claimed more than 800 lives and many more victims in Spain until the allegedly definitive cessation of its armed activity declared on 20 October 2011 and its definitive dissolution announced on 2 May 2018. In Figure A2, I report the distribution of killings due to ETA’s attacks by Spanish provinces. The picture shows that the majority of attacks were perpetrated in the Basque and Navarrese provinces but that also Madrid and Barcelona have been frequent targets.

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<sup>25</sup> Among others monographic works on ETA e.g. Clark; 1984, Domínguez 1998 and Mees 2003.





**Figure A2: ETA's killings by province**

In particular Basque and Navarrese entrepreneurs and liberal professionals were specific targets of violence including blackmailing, assassinations, robberies, extortion and kidnappings-for-ransom. The persecution of this specific cluster of the population had an ideological dimension and led some of the threatened entrepreneurs to leave the Basque Country and Navarre and move their firms to more peaceful regions. In this regard, the extortion mechanism, described in detail in Buesa and Baumert (2013), worked through the sending of letters to the entrepreneurs and liberal professionals and their relatives, threatening that they would become targets of ETA if they did not pay. Buesa and Baumert (2013) show that the revolutionary tax extorted from this cluster of the population was one of the main sources of income for ETA from the 1970s onwards, after substituting the previously more important activities of bank robberies and thefts. These authors estimated that during the three decades that range from 1978 to 2008, ETA obtained more than 115 million euros through its extortion activity. This value has to be considered a minimum, since the information employed is mostly obtained from documents seized from the terrorist group and, as such, is incomplete. Leonisio et al. (2017) report similar results. These authors have estimated that ETA raised about 161 millions of euros between 1973 and 2011. According to Fernández-Soldevilla (2016), the payment rate of the revolutionary tax was, on average, 6% in Álava, Biscay and

Navarre and 13% in Gipuzkoa. In the same line, Juan Miguel Liñan Macias – former representative of the Spanish Ministry of Defense – declared that “ETA is funded mainly from one source: the money it collects through extortion of small and medium-sized businessmen, charging them the so-called "revolutionary tax". At present the amounts required are between 35,000 and 400,000 euros. The annual budget the terrorist organization needs for the maintenance of its structures is estimated at around 10 million euros”.<sup>26</sup> Thus the effect of terrorism is responsible at least in part for the economic downturn suffered by the Basque Country during ETA’s period of activity (see Abadie and Gardaebazal, 2003; Enders and Sandler 1991, 1996).

Finally ETA held a central role within the Basque national liberation movement (MLNV), a composite aggregation of multiple organizations (both legal and illegal), which were united by the aforementioned common ideological objective but not always by any actual formal link. In the past decades, several judicial rulings have made illegal many, but not all, of the MLNV entities due to their connections with ETA. Some of the entities that were part of the MLNV were responsible for low-intensity urban terrorism (‘kale borroka’) which contributed to create an atmosphere of violence and represented a further threat to the stability of businesses based in the Basque Country and Navarre<sup>27</sup>.

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<sup>26</sup> Text extracted from: “Counterterrorism: An Example of Co-operation”, speech pronounced at the Seminar on The role of the Euro-Atlantic Partnership Council in combating terrorism, Feb. 22nd, 2002.

<sup>27</sup> For a detailed investigation of ETA’s network and its financing system see Buesa (2011), Buesa and Baumert (2013), Fernández-Soldevilla (2016) and Leonisio et al. (2017).

## **Appendix B**

### **Multilevel models**

Here I report the results of the multilevel version of both the complete ordered probit and probit models (e.g. De Leeuw and Meijer, 2008; Goldstein, 2011 and Hedeker, 2008). More precisely, given that individuals responding to the surveys are nested within provinces and these within autonomous communities, I perform three-level models. Column 1 (2) of Table B1 replicates column 4 of Table 2 (3); column 3 (4) of Table B1 replicates column 5 of Table 2 (3).

This analysis is performed to better account for within-groups correlation of the error term although in the main analysis I am already indirectly taking into account this issue and controlling for most of the within-provincial correlation of the error term by including provincial level fixed effect both in equation 10 and 11. This seems to be confirmed also by the results on the estimated variances of the random intercepts for provinces and regions in multilevel models presented in Table B1, which are not significantly different from zero.

The results of the main analysis still holds for any specification of the multilevel models as the interacted terms and linear combinations of interacted and un-interacted coefficients show. This corroborates and reinforces the analysis presented in the paper.

**Table B1: Impact of terrorism on perceived tax enforcement (1994-2015). Multilevel models**

Dependent variables	PTE (Multilevel Ordered Probit Models)		PTE01 (Multilevel Probit Models)	
	(1)	(2)	(3)	(4)
Truce	0.037 (1.222)	0.037 (1.233)	0.003 (0.059)	0.003 (0.057)
Truce×Foral	0.191*** (32.558)	0.180*** (33.692)	0.173*** (4.613)	0.168*** (3.977)
Truce×Foral×SE		0.258*** (63.857)		0.104 (0.810)
Foral	-0.360*** (-18.475)	-0.359*** (-19.420)	-0.332*** (-4.310)	-0.331*** (-4.314)
SE	0.065*** (5.185)	0.058*** (90.882)	0.051** (1.960)	0.049* (1.816)
Municipality size	-0.000*** (-16.034)	-0.000*** (-16.227)	-0.001 (-0.101)	-0.001 (-0.101)
Nationalist voter	0.000*** (136.019)	0.000*** (141.062)	-0.020 (-0.395)	-0.021 (-0.400)
Left	0.211*** (9.070)	0.211*** (9.414)	-0.069*** (-3.920)	-0.069*** (-3.917)
Female	0.168*** (4.891)	0.168*** (4.932)	-0.032** (-2.054)	-0.032** (-2.052)
Age	0.018 (1.490)	0.018 (1.530)	0.002*** (5.156)	0.002*** (5.156)
Head of household	-0.008 (-1.411)	-0.008 (-1.617)	0.003 (0.204)	0.003 (0.204)
Married	-0.007*** (-2.875)	-0.007*** (-2.913)	0.005 (0.270)	0.005 (0.269)
Employed	0.001 (0.225)	0.000 (0.064)	0.003 (0.133)	0.003 (0.141)
Retired	-0.042*** (-9.199)	-0.042*** (-9.578)	-0.024 (-1.193)	-0.024 (-1.186)
Public employee	-0.023** (-2.296)	-0.023** (-2.263)	-0.015 (-0.850)	-0.016 (-0.856)
Per capita provincial GDP	0.001*** (25.843)	0.001*** (26.910)	-0.000 (-1.171)	-0.000 (-1.173)
Provincial population	-0.013* (-1.923)	-0.013* (-1.910)	0.000** (2.262)	0.000** (2.262)
Righthist central government	0.001 (0.521)	0.001 (0.517)	0.251*** (3.347)	0.252*** (3.349)
Country electoral cycle	0.009*** (14.321)	0.010*** (6.173)	0.146*** (3.565)	0.146*** (3.566)
Leftist regional government	-0.002** (-2.141)	-0.002*** (-5.352)	0.025 (0.655)	0.024 (0.653)
Regional electoral cycle	0.000 (0.041)	-0.000 (-0.009)	-0.006 (-0.265)	-0.006 (-0.270)
<b>Linear Combinations</b>				
Truce+Truce×Foral	0.228*** (9.23)	0.217*** (8.78)	0.176** (2.14)	0.172** (1.99)
Truce+Truce×Foral+Truce×Foral×SE		0.475*** (22.97)		0.276*** (2.95)
Var(_cons[Region])	0.000 (0.384)	0.000 (0.423)	0.000 (0.036)	0.000 (0.043)
Var(_cons[Region>Province])	0.000 (0.000)	0.000 (0.000)	0.000 (0.116)	0.000 (0.161)
Observations	47382	47382	47382	47382
Log likelihood	-54714.936	-54713.373	-30490.425	-30490.254
AIC	109433.9	109430.7	61012.85	61014.51
BIC	109451.4	109448.3	61153.11	61163.53

Note: z statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Each model includes YEAR and PROVINCIAL fixed effects. Models 2, 4 and 5 also include a set of dummies for the political parties that respondents declared to vote for. AIC is the Akaike's information criterion; BIC is the Bayesian information criterion.

## Appendix C

### Placebo test: the impact of terrorism on tax enforcement effectiveness in “Capitals”

Here I present the results of the placebo test. As suggested in Appendix A, Madrid and Barcelona have also been frequent targets of ETA’s attacks but I do not expect a reaction to terrorism in terms of changes in tax enforcement in these provinces for two reasons. First, despite they have been targeted often by ETA, those provinces have never been under a constant threat of terrorism so that mobility of tax bases should not be a threat there. Second, since these provinces are part of the common financing regime, the most important taxes are administered there by the central tax agency. This excludes the existence of incentives on the part of tax authority to counteract potential mobility of tax bases to other provinces within the same financing regime because this would not entail a loss of revenues (just a different territorial distribution of the latter). For this reason, I perform a placebo test where I introduce in equation 10 a dummy identifying those provinces,  $Capitals_{jt}$ , and an interacted term of this variable with  $Truce_{jt}$ . These variables have been added both in presence and in absence of the term  $Truce_{ijt} \times Foral_{ijt}$ . The results of this analysis, reported in Table C1, confirm my hypothesis: although perceived tax enforcement in Madrid and Barcelona is lower compared to other common regime provinces (as suggested by the coefficient of  $Capitals_{jt}$ ), there is no reaction to terrorism in terms of changes in perceived tax enforcement for those provinces (as suggested by the coefficient of  $Truce_{ijt} \times Capitals_{ijt}$ ). The results of the main analysis hold. This corroborates the main hypothesis of the paper that reaction on the part of tax administration is a result of the combination of tax autonomy and permanent threat of terrorism.

**Table C1: Impact of terrorism on perceived tax enforcement (1994-2015). Placebo – “Capitals”**

Dependent variables	Perceived Tax Enforcement - PTE (Ordered Probit Models)	
	(1)	(2)
Truce	0.062 (1.297)	0.037 (0.756)
Truce×Foral		0.191*** (4.568)
Truce×Capitals	-0.013 (-0.498)	0.002 (0.078)
Foral	-0.247*** (-4.286)	-0.361*** (-5.771)
Capitals	-0.667*** (-4.254)	-0.698*** (-4.442)
SE	0.065*** (2.811)	0.065*** (2.795)
Municipality size	-0.000*** (-2.986)	-0.000*** (-3.548)
Nationalist voter	0.000*** (3.790)	0.000*** (4.007)
Left	0.211*** (6.043)	0.211*** (6.051)
Female	0.165*** (4.557)	0.168*** (4.653)
Age	0.023 (1.312)	0.018 (1.046)
Head of household	-0.008 (-0.622)	-0.008 (-0.555)
Married	-0.007** (-2.018)	-0.007* (-1.946)
Employed	0.016 (0.390)	0.001 (0.027)
Retired	-0.042*** (-3.973)	-0.042*** (-3.959)
Public employee	-0.023** (-1.975)	-0.023** (-1.987)
Per capita provincial GDP	0.001*** (3.557)	0.001*** (3.535)
Provincial population	-0.013 (-1.026)	-0.013 (-1.027)
Rigthist central government	0.001 (0.111)	0.001 (0.120)
Country electoral cycle	0.009 (0.730)	0.009 (0.719)
Leftist regional government	-0.002 (-0.086)	-0.002 (-0.107)
Regional electoral cycle	-0.000 (-0.002)	0.000 (0.015)
<b>Linear Combinations</b>		
Truce+Truce×Foral		0.227*** (3.77)
Truce+Truce×Capitals	0.049 (0.98)	0.039 (0.77)
<i>Observations</i>	47382	47382
Log likelihood	-54725.209	-54714.933
$R^2_{M\&Z}$	0.10	0.10
$R^2_{Count}$	0.46	0.46
AIC	109672.4	109653.9
BIC	110645.4	110635.7

Note: z statistics in parentheses; \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Each model includes YEAR and PROVINCIAL fixed effects. Models 2, 4 and 5 also include a set of dummies for the political parties that respondents declared to vote for. AIC is the Akaike's information criterion; BIC is the Bayesian information criterion.

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